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## ABSTRACT

This paper describes a one-year longitudinal follow up study of the long term effects of role taking training procedures (in which children assumed a number of perspectives) on children's social and cognitive behaviors. Longitudinal and cross-sectional age effects were also analyzed. In an earlier study the effect of two types of role-taking experiences on role-taking, altruism, empathy and aggression were investigated in 6- and 9-year-old boys. Results of this first study indicated that boys from the two training conditions showed increased role taking and altruistic behaviors when compared to the control group. In this study 17 of the original 20 children in the training conditions and eight of the original ten children in the control conditions were retested. In addition, a new control group was established with ten 7- and ten 10-year-old boys who were not previously tested. They were given measures of role taking, empathy, altruism, and conservation. Significant cross-sectional and longitudinal age effects were found but no significant training effects. Correlational results indicated a relationship between role taking, altruism, and empathy. These results suggest that the original training promoted a change in performance rather than a structural change. The interrelationship of social and cognitive processes is also discussed. (Author/SB)

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A LONGITUDINAL INVESTIGATION OF ROLE TAKING,  
ALTRUISM, AND EMPATHY

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## A LONGITUDINAL INVESTIGATION OF ROLE TAKING, ALTRUISM, AND EMPATHY

As may be apparent from this paper session, the interaction of social and cognitive processes and the effect of their development on social behaviors have been given increased attention in the recent literature. Role taking and empathy are two skills which may serve as mediators between social and cognitive domains (Hoffman, 1975). Some of the issues which are being investigated are: whether the relationship between role taking, empathy, and altruism is causal or correlational, how they develop, and whether these behaviors can be changed through structured experiences.

In an earlier (Iannotti, Note 1) the effect of two types of role-taking experiences on role taking, empathy, altruism, and aggression was investigated in 6- and 9-year-old boys. Two training procedures were compared to a control condition. The two training procedures differed in the number of perspectives the children had to assume and the frequency with which they had to change perspectives. Both training conditions resulted in increased role taking performance when compared to the control conditions. In 6-year-olds altruism was significantly greater following both training conditions. Role taking was positively correlated with altruism in 9-year-olds.

The present study was a one-year longitudinal investigation of the long term effects of the training experiences on social and cognitive behaviors. Longitudinal age changes as well as cross-sectional age differences were analyzed. The longitudinal study also provided the opportunity to evaluate changes in the relationships between these variables.

### Method

The subjects were 7- and 10-year-old boys from a predominantly white,

middle-class parochial school. Seventeen of the initial twenty children in the training conditions (Group I) and eight of the initial ten children in the control conditions (Group II) were retested one year after the original study. In addition a new control group was established with 10 seven- and 10 ten-year-old boys who were not previously tested (Group III). Measures of role taking, empathy, and altruism were administered to all of the subjects. All of the children from the original study (Groups I and II) and ten of the children in the new control group (Group III) were also assessed for conservation skills.

Role taking. The measure of role taking, or social perspective taking, evaluated the child's ability to understand another's motivations, feelings, and thoughts. The role-taking measure was adapted from the procedures used by Flavell (1968) and Selman (Selman and Byrne, 1974). Flavell's procedure was a binary-choice social guessing game in which the subject tricked another boy by removing a nickel or dime from their respective boxes. In the second half of the game the subject selected from two boxes, one of which had been emptied by another subject. The reasoning used to solve this problem indicated the child's role-taking processes. In Selman's measure three stories which present social and moral dilemmas were read to the child. The subject was then asked several questions about how to solve each dilemma. The process used to answer these questions, rather than the actual solution to the dilemma, was used to indicate the subject's level of role-taking performance (Selman, et al., 1974).

Empathy. In the empathy measure (Tannotti, 1975; Note 2) each subject was told a story about a picture and asked to indicate his own feelings and the feelings of the child in the story. The emotional cues of the child in the picture were either appropriate or inappropriate to the situational cues,

e.g., appropriate cues would be a happy boy at a birthday party, inappropriate cues would be a sad boy at a birthday party. It was therefore possible to differentiate between responses to emotional and situational cues. If the subject, when responding to the stimuli with inconsistent emotional and situational cues, indicated an emotional response which matched the emotional cues in the picture, it was scored as emotional matching. If the subject's response matched the situational cues in this picture, it was scored as situational matching. In this way the measure operationalized several different definitions of empathy (Iannotti, 1975).

Altruism. Altruism was measured by giving the subject an opportunity to share some candy with a needy child. The number of candies donated in private was the altruism score.

Conservation. In order to assess the long term effect of the training on cognitive development and to evaluate the relationship between cognitive and social behaviors, conservation tasks were administered to 35 of the subjects. Conservation was assessed separately about five days after the first testing session. Conservation tasks included conservation of quantity, area, and volume, and were administered and scored in a manner similar to that described by Goldshmid and Bentler (1968).

#### Results and Discussion

Test-retest reliabilities. The test-retest reliabilities of the measures are presented in Table 1. Over the one-year test-retest interval from 6 to 7 years of age, two of the measures show significant correlations: role taking and emotional matching. Because of the possible ceiling effects for 9- and 10-year old subjects and the rapid changes which may take place during a one-year retest interval, it is not surprising that only two of the measures would have significant reliability. Structural differences

between subjects on social-cognitive processes like role taking and empathy appear to be reasonably stable from 6 to 7 years of age, even though these skills are developing rapidly (see results below).

Training effects. The scores for the measures of role taking, altruism, and conservation were higher in the training group as compared to the control group but these differences were not statistically significant. These results suggest that the original training conditions promoted a change in performance rather than a structural change. A change in performance is more likely to result in temporary differences which are later obscured by other experiences. A structural change is more likely to endure, building on new experiences. Continued maintenance of age-appropriate or stage-appropriate training may be necessary to preserve the training effects. The non-significant trends would suggest that if structural changes did occur they did not endure or that similar changes occurred in the control group.

Longitudinal changes and cross-sectional differences. Ceiling effects on some of the measures may have obscured the effect of longitudinal changes and cross-sectional differences. Longitudinal data can be used to evaluate the age changes in the subjects who were retested after one year. Only role-taking performance increased significantly in the longitudinal sample,  $t(24) = 3.133, p < .01$ . The increase in the 7-year-old subjects was statistically significant,  $t(11) = 3.623, p < .01$ , while the increase in the 10-year old subjects was not,  $t(12) = 1.484, p < .20$ . Cross-sectional data can be used to compare performance in 7- and 10-year-old subjects. Significant cross-sectional differences between 7- and 10-year-old subjects were present for the measures of role-taking, altruism, and conservation: role taking,  $t(43) = 8.44, p < .001$ ; altruism,  $t(43) = 4.54, p < .001$ ; conserva-

tion,  $t(33) = 4.905$ ,  $p < .001$ . For the measures of empathy, a marginally significant increase in reliance on situational cues, situational matching, was present from 7 to 10 years of age,  $t(43) = 1.822$ ,  $p < .10$ .

Thus the role taking behavior changes over a one year period and performance on measures of role taking, altruism, and conservation was higher in 10-year-old subjects than in 7-year-old subjects. In the earlier study (Iannotti, Notes 1 and 2), significant positive age differences between 6- and 9-year-old subjects were found for role taking, altruism, and situational matching. A significant decrease in performance between 6- and 9-year-old subjects was found for emotional matching. The present study shows continued age differences for role taking and altruism but not for the measures of empathy. These results, particularly the one-year longitudinal changes in role taking, support the extensive research which shows that 6 to 10 years of age is a time of rapid changes in social cognition. The increased reliance on situational cues in the empathy measure may be due to the increase in perspective-taking ability and the subsequent realization that emotional cues may be faked while situational cues are more reliable.

Relationship between variables. The correlational data were a little more difficult to interpret (see Table 2). Role taking was positively correlated with altruism in the 7-year-old subjects,  $r(22) = .41$ ,  $p < .05$ . This is not significantly different from the relationship found earlier in 6-year-old subjects,  $r(30) = .17$ . Thus children who were high in role taking ability tended to be more altruistic. In the earlier study training in role taking produced increased altruism in 6-year-old subjects and role taking and altruism were correlated in 9-year-old subjects,  $r(30) = .41$ ,  $p < .05$ .

However, altruism was not correlated with role taking in the 10-year-old subjects,  $r(23) = .01$ . This represents a significant ( $p < .05$ ) decline in the relationship when it is compared to the correlation for the 9-year-old subjects of the earlier study. The data for the 6-, 7-, and 9-year-old subjects support other research which has shown a relationship between a socio-cognitive skill like role-taking and a social behavior like altruism. Further research is needed to determine the nature of this relationship in 10-year-old children and whether the change in the relationship between role taking and altruism is permanent.

Half of the empathy stimuli presented conflicting emotional and situational cues. Correlations with empathy were dependent on whether the children responded to the situational or the emotional cues. When empathy was measured as an emotional response to emotional cues (emotional matching), it was negatively correlated with conservation in 7-year-old subjects,  $r(17) = -.66$ ,  $p < .01$ . Thus children who conserve tend to ignore emotional cues which can be altered or faked. In 10-year-old subjects there was a significant positive correlation between role taking and situational matching,  $r(23) = .68$ ,  $p < .001$ , and a negative correlation between emotional matching and altruism,  $r(23) = -.44$ ,  $p < .05$ . The use of conflicting cues is useful in discriminating responses to situational and emotional cues. These different responses apparently have different relationships to other behaviors. Emotional matching may be a relatively immature response. When the cues are in conflict, response to situational cues is correlated with cognitive and social performance. Although no causal relationship between role taking and empathy have been demonstrated in this or earlier research, situational matching may be a useful construct in dealing with the relationship between role taking, altruism, and cognitive development.

Summary. With respect to the original training study the lack of emotional training effects would suggest that the training promoted a change in performance rather than a structural change. Continued maintenance of age-appropriate training may be necessary to maintain the training effects or to produce structural change.

The developmental and correlational results suggest the interrelationship of social processes. Role taking may serve as a mediator between the cognitive and social domains. It is apparent from the longitudinal and cross-sectional results that role taking is developing rapidly during middle childhood. The correlational data, as well as the earlier training data, suggest that the development of role taking is related to changes in altruism and empathy. Piaget (1958) sometimes speaks of cognitive and social development as parallel structures which are interrelated. Role taking may be one of the processes which maintains structural similarity between these two domains.

Our understanding of empathy is still not complete. Although the theoretical relationship between empathy and prosocial behavior has been well articulated (Hoffman, 1975; Feshback, 1975; Iannotti, 1975; Note 3) the research has not always confirmed this relationship (e.g., Levine & Hoffman, 1975). The present study offers some hope. The cues to which the empathizer is responding may have been confounded or ignored in past measures of empathy. The present study suggests that situational cues are more relevant and that empathy, when measured as an emotional response to situational cues, plays an increasing role with age.

#### Reference Notes

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Table 1  
One Year Test-Retest Reliability for Role Taking,  
Altruism, Emotional Matching, and Situational Matching

|                      | 6 to 7 years of age | 9 to 10 years of age |
|----------------------|---------------------|----------------------|
| Role Taking          | .54*                | .10                  |
| Altruism             | .10                 | .21                  |
| Emotional Matching   | .60*                | .19                  |
| Situational Matching | .49                 | .17                  |

NOTE: The test-retest reliabilities for 6- to 7-year-old subjects involved 12 subjects. The test-retest reliability for 9 to 10 years of age involved 13 subjects.

\* $p < .05$

Table 2

Correlations Between Role Taking, Altruism,  
Situational Matching, Emotional Matching, and  
Conservation for 7- and 10-year-old Subjects

| Variable                          | 1      | 2     | 3       | 4      |
|-----------------------------------|--------|-------|---------|--------|
| 7-year-old Subjects <sup>1</sup>  |        |       |         |        |
| 1. Role taking                    |        |       |         |        |
| 2. Altruism                       | .41*   |       |         |        |
| 3. Situational Matching           | .33    | -.15  |         |        |
| 4. Emotional Matching             | -.01   | .06   | -.71*** |        |
| 5. Conservation <sup>2</sup>      | .12    | .31   | .42     | -.66** |
| 10-year-old Subjects <sup>3</sup> |        |       |         |        |
| 1. Role taking                    |        |       |         |        |
| 2. Altruism                       | .01    |       |         |        |
| 3. Situational Matching           | .68*** | .07   |         |        |
| 4. Emotional Matching             | -.41*  | -.44* | -.63*** |        |
| 5. Conservation                   | .05    | -.05  | .02     | -.13   |

<sup>1</sup>n = 22 for all correlations with 7-year-old subjects  
except those involving conservation.

<sup>2</sup>n = 17 for all correlations involving conservation in  
7-year-old subjects.

<sup>3</sup>n = 23 for all correlations involving 10-year-old subjects  
except those involving conservation.

<sup>4</sup>n = 18 for all correlations involving conservation in  
10-year-old subjects.

\*p < .05  
\*\*p < .01  
\*\*\*p < .001